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IN THE UNITED STATES PATENT AND TRADEMARK OFFICEApplicants: Daniel Conrad *et al.*

Serial No.: 10/698,920

Group Art Unit: 1751

Examiner: Amina Khan

Filed: October 31, 2003

Attorney Docket No.:
US19984054-5 (094342.0031)

) Certificate of Mailing (37 CFR 1.8(a))
) I hereby certify that this paper (along with
) any paper referred to as being attached
) or enclosed) is being faxed to the U.S. Patent and
) Trademark Office to the attention of Examiner Amina
) S. Khan at 571.273.8300 on the date indicated below.

) Name:

) Signature: 

) Date:

Affidavit Under 37 CFR 1.131

Madam:

I the named Inventor hereby declare as follows:

1. I am a named Inventor of the subject matter that is claimed and for which a patent is sought on the invention as above mentioned. This application was filed on October 31, 2003. This application is a continuation-in-part application of application serial no. 10/027,160 filed on December 20, 2001, and application serial no. 10/027,431 filed on December 20, 1998, which claim the benefit of the earlier filing date of provisional patent application 60/045,072 filed on April 29, 1997. I have reviewed the subject matter of provisional application 60/045,072 and can attest that the subject matter of the Applicants' independent claims are supported by the application. As such, the pending application serial no. 10/698,920 has an earliest effective filing date of April 29, 1997.

2. In the Office Action dated November 2, 2006, the United States Patent and Trademark Office (USPTO) rejected claims 1-13 and 24-30 under section 103(a) as being as being unpatentable over Flynn et al., US Patent No. 5,962,390, filed on May 17, 1996 and issued on October 5, 1999 (hereinafter "Flynn et al.") in view of secondary references Dickey (US 3,410,118), De Pas et al. (US 3,163,028), Tatch et al. (US 5,431,827) and Krugmann (US 4,252,546).

3. Claims 1-13 and 24-30 of Application Serial No. 10/698,920 which have a priority date of April 29, 1997 are not unpatentable over Flynn et al. 5,962,390 which issued on October 5, 1999, and which is a continuation-in-part of application serial no. 5,925,611 filed on December 15, 1995, and which claims the benefit of application no. 08/375,812, filed on January 20, 1995, now abandoned, in view of the secondary references.

4. Per applicable U.S. patent law, Flynn et al. 5,962,390 has an effective 102(c) date of May 17, 1996 (the filing date).

5. This written document is an affidavit of prior invention to overcome the cited patent of Flynn et al. 5,962,390. I, an Inventor of the subject matter of the rejected claims, hereby submit this oath to overcome this reference. I performed certain acts described below.

I. Showing of Facts Through Document Evidence

6. Below are facts that show a conception of the invention on or before the May 17, 1996 filing date of Flynn et al. 5,962,390 coupled with due diligence from such conception to a subsequent actual reduction to practice or to the provisional application filing date of 29 April 1997.

7. **Exhibit A** is a slide show summary created and dated before May 17, 1996 (date redacted). I prepared this slide show in preparation for a presentation to Whirlpool, our employer and the assignee of the application. **Exhibit B** is a document entitled, "Non Aqueous Fluid Assessment" which sets up testing protocols using non-aqueous working fluids. This document too was generated prior to May 17, 1996.

A. Facts establishing conception

8. In general, the facts of Exhibits A and B are hereby incorporated by reference. Moreover, I present the following facts to establish a conception of the invention on or before the May 17, 1996 Flynn et al. filing date.

(i) Conception

9. The basic inventive concept of the application is the fluid composition used in non-aqueous laundering.

10. The USPTO presented Flynn et al. as teaching dry cleaning processes which use various fluorinated ether compounds in industrial dry cleaning processes (referencing col. 3, lines 17-56) which also meets the limitations of the properties required of Applicants' working fluid. However, as explained in the contemporaneously filed Response to Final Office Action dated November 2, 2006, Flynn et al. does not disclose a working fluid as claimed with an adjuvant and does not disclose the use of a working fluid in an automatic laundering apparatus, and therefore, Flynn et al. does not serve as a basis in an obvious rejection in claims 1-13 and 24-30.

11. The details of Exhibit A support conception of the claimed invention. Thus, the scope of this affidavit is commensurate with the scope of the claimed subject matter. Particularly, Exhibit A shows that "Project Hope" concerns working fluid chemistries. Some of the exemplary working fluids include Flourinert and possess the properties of being an ideal working fluid. The next slide shows Project Hope and the various characteristics of an exemplary non aqueous working fluid. The next slide shows that hundreds of compounds were selected for

further testing and that several were currently being bench tested. (See Exhibit B for some testing protocols).

(ii) **Effective date of Flynn et al.**

12. As indicated on the face of the Flynn et al. patent, issued on October 5, 1999, and has a section 102(e) date (filing date) of May 17, 1996. Accordingly, the date to overcome is May 17, 1996.

(iii) **On or before the effective date of Flynn et al.**

13. I allege that the acts relied upon to establish the date on or before May 17, 1996. The testing and the exhibits attached were generated prior to the effective date of Flynn et al.

B. Facts establishing reduction to practice

14. In general, the facts of Exhibits A and B are hereby incorporated by reference. Moreover, I present the following facts to establish a reduction to practice.

(i) **Actual reduction to practice**

15. After conception of the invention on or before May 17, 1996, I tested or had the invention tested to establish its capacity to successfully perform its intended purpose. Exhibit B represents an invention testing protocol/assessment that discusses the experiments that would be run during a period starting before May 17, 1996 and into later parts of 1996.

16. Exhibit A shows a slide show summary generated and dated prior to May 17, 1996 that shows that of the many chemicals that exhibited some of the desired characteristics, several were chosen as candidates. Several were benchtop tested.

(ii) **Constructive reduction to practice**

17. I allege that the present application for a U.S. patent recites independent claims of the same invention disclosed in the provisional application filed on April 29, 1997.

18. Therefore, constructive reduction to practice was achieved on April 29, 1997.

C. Facts establishing reasonable diligence

19. I present the following facts to establish that there was reasonable diligence from on or before the May 17, 1996 effective date of Flynn et al. to the actual reduction to practice of Exhibits A or B or alternatively to the provisional filing date.

21. As noted above, conception occurred on or before the May 17, 1996 filing date of Flynn et al. Moreover, actual reduction to practice occurred on or before April 29, 1997. I assert that there was reasonable diligence from conception to reduction to practice, either actual or constructive. Exhibits A and B indicate that several exemplary working fluids were selected as having desirable characteristics and these chemicals were submitted for further bench testing. As

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Exhibit A shows, I was cognizant of the need to pursue patent applications to protect the invention. The inventors timely filed a provisional patent application on April 29, 1997. the selection of chemicals, the experiments, and the actual filing of a patent application indicate a reasonable diligence period from on or before the Flynn et al. filing date.

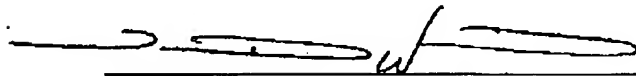
22. Alternatively, the time period taken for the completion of the application constitutes reasonable diligence. During this time period, I and/or our representative worked reasonably hard and expeditiously to prepare, execute and file a patent application in the United States Patent Office. Accordingly, there was reasonable diligence from on or before the Flynn et al. filing date to the filing of the application of the present invention.

II. Allegations and other Statements

23. I allege that the acts relied upon to establish the date on or before Flynn et al. were carried out in the United States.

III. Signatures and Declaration in Lieu of Oath Under 37 CFR 1.68

24. I hereby declare that the statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or patent issuing thereon.


Tremitchell Wright

1/2/07
Date

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Exhibit A

Non-Aqueous Wash System Development

CTD Laundry
1996 Project

Whirlpool Confidential

CTD Laundry
Non-Aqueous Projects

✧ Inert Working Fluids
- Project Hope 1996

Alternative Technologies Project Hope

★ Define the Ideal Inert Working Fluid

- Low / No Pressure System

★ Conduct Technology Assessments of

Non-Aqueous Fluids

- Fluorinert (3M)
- Hydrocarbon Compounds
- INVERT (Dow)
- Rynex (Perc Replacement)

★ Develop Whirlpool IP Strategy and Portfolio

Whirlpool Confidential

Project Hope Fluorinert

- ★ Produced by 3M
- ★ Used for Electronic Component Cooling
- ★ Initially Waste Stream Product
- ★ Current Cost ~ \$400/gallon
- ★ Inert Fluid (Non-Residue)
- ★ Extremely Low Surface Tension (~15 dynes/cm)
- ★ Low Vapor Pressure (~0.1mm Hg) (Fast Drying)
- ★ No Detergent Properties (Cleaning)
- ★ Potential Transport Medium
- ★ Non-Volatile (Simple Recycle/Control)



Project Hope Ideal Fluid

★ Searching for:

- Non-Flammable
- Non-Toxic
- Environmentally Compatible

★ Reviewed 58,100 Compounds 18 Classes to Date

★ Currently, 293 Compounds Remain for Second

Level Screening

- ★ Currently, detailed screening of 10 compounds in progress (Benchtop Testing)
- ★ Using Chemistry Assessment to Define Ideal Working Fluid for IP Portfolio and Next Steps

Warrior Confidential

Exhibit B

Non-Aqueous Fluid Assessment

1. **Chemical Properties Evaluation**
 - * Surface tension
 - * Solubilities (Water, Oil, Surfactants)
 - * Stabilities
2. **Detergent Evaluation**
 - * Particulate removal
 - * Oily removal
 - * Stains
3. **Fabric Care Evaluations**
 - * Shrinkage
 - * Tensile strength
 - * Dye loss or mobility
4. **Material Compatibility**
 - * Plastics
 - * Stainless steel
 - * Rubber
5. **Safety Assessment**
6. **Environmental Assessment**

1. Chemical Properties Evaluation

Surface Tension:

Place 50 ml sample into the tensiometer vessel
Temperature of sample 70F (21C) remain constant
Take three samples

Solubilities:

Place a 50 ml sample into a 500 ml flask
Place a stir bar into flask
Maintain a constant temperature of 70F (21 C)
Add the desired solute in 1 ml increments
Record amount of solute which solubilizes into solution

Stabilities: (In Fume Hood w/ Glass Down)

Add 10 ml sample to a 100 ml flask
Place stir bar into flask
Constant temperature of 70 F (21C)
Add desired solute (ie. Bleach, Hydrogen Peroxide, etc.)
Observe and record stability

2. Deterstive Evaluation

Particulate removal

Add 500 ml of fluid to Non-Aqueous setup
Place 3 AS-9, PC-9 swatches in the container
Agitate for 5 min @ 100 spm
Temperature maintained at 70 F (21C)
Remove swatches and hang dry in Fume hood
Read swatches on colorimeter

Oily soil removal

Add 500 ml of fluid to Non-Aqueous setup
Place 3 oily soil swatches in to container
Agitate for 5 min @ 100 spm
Temperature maintained at 70F (21C)
Remove swatches and hang dry in Fume hood
Read swatches on colorimeter
Perform soxlet extraction to determine oily soil remaining

Stain removal

Add 500 ml of fluid to Non-Aqueous setup
Place selected stain swatches into container
Agitate for 5 min @ 100 spm
Temperature maintained at 70 F (21C)
Remove swatches and hang dry in Fume hood
Read swatches on colorimeter

3. Fabric Care Evaluation

Dimensional Stability

Measure length and width of swatch and record
Place 250 ml of selected fluid into container
Add selected fabric swatches to fluid (ie. Cotton, Wool, Silk, Polyester, & Blends)
Let swatches soak for 5 minutes
Remove swatches and dry flat
After dry, Measure and record

Tensile strength

Measure the tensile strength of material
Place 500 ml of selected fluid into container
Add selected fabric swatches to fluid (ie. Cotton, Wool, Silk, Polyester, & Blends)
Agitate swatches for 5 min @ 100 spm
Remove swatches and dry flat in fume hood
Repeat above four times (total of five trials)
Measure tensile strength, if no change repeat for 10, 15, 20, 25 trials.

Dye Loss and Mobility

Read white receivers on colorimeter
Place 500 ml of fluid into Non-Aqueous setup
Add a red and blue dye swatch plus two receivers
Agitate for 5 min @ 100 spm
Remove swatches and hang dry in Fume hood
Read white receivers on colorimeter

4. Material Compatibility

Plastic Compatibility

Cut a 2" X 2" piece of selected plastic
Weigh plastic sample and record
Place in a 500 ml beaker
Add sufficient amount of selected fluid to immerse plastic
Cover beaker
Weigh the plastic sample each day for the first ten days
Record the weight
Record and additional observations (ie. discoloration, thinning, cracking, etc)

Stainless Steel Compatibility

Cut a 1" X 1" piece of stainless steel
Weigh sample of stainless steel and record
Place in a 500 ml beaker
Add sufficient amount of selected fluid to immerse steel
Cover beaker
Weigh the stainless steel sample each day for the first ten days
Record the weight
Record and additional observations (ie. discoloration, thinning, cracking, etc)

Rubber Compatibility

Cut a 2" X 2" piece of selected rubber sample
Weigh the rubber sample and record
Place in 500 ml beaker
Add sufficient amount of selected fluid to immerse rubber
Cover beaker
Weigh the rubber sample each day for the first ten days
Record weight and additional observations

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5. Environmental Assessment:

6. Safety Assessment: